wherein,

R_1 is a substituted or unsubstituted group selected from the group consisting of: C1-C6 alkyl, C3-C8 cycloalkyl, C2-C6 alkenyl, C3-C8 cycloalkenyl, C2-C6 alkynyl, C6-C10 aryl, C7-C15 arylalkyl and 4-8 membered heteroaryl;

Y is O, NH or S;

R_2 is a substituted or unsubstituted group selected from the group consisting of: C1-C6 alkyl, C3-C8 cycloalkyl, C2-C6 alkenyl, C3-C8 cycloalkenyl, C2-C6 alkynyl, C6-C10 aryl, C7-C15 arylalkyl, 4-8 membered heteroaryl and —C(═O)R_4, wherein R_4 is a substituted or unsubstituted group selected from the group consisting of: C1-C6 alkyl, C3-C8 cycloalkyl, C2-C6 alkenyl, C3-C8 cycloalkenyl, C2-C6 alkynyl, C6-C10 aryl, C7-C15 arylalkyl and 4-8 membered heteroaryl;

=– represents a double bond or a single bond, when it is a double bond, R_3 is O; when it is a single bond, R_3 is OR_5, F or SH, and R_5 is H, Boc, TBS, TES, CH_2SCH_3, CH_2OCH_3, —$CH_2OP(═O)(OH)_2$, —$CH_2OP(═O)(OBn)_2$, —$OP(═O)(OH)_2$, —$OP(═O)(OBn)_2$, —COOH, monosaccharide, folic acid and folic acid analog or monoclonal antibody;

each X is independently H, OH or halogen;

each of the above term "substituted" independently means that one or more hydrogen atoms on the group are substituted with a substituent selected from the group consisting of: halogen, —OH, NH_2, CN, COOH, —OP(═O)$(OH)_2$, unsubstituted or halogenated C1-C8 alkyl, unsubstituted or halogenated C3-C8 cycloalkyl, unsubstituted or halogenated C1-C8 alkoxy, unsubstituted or halogenated C2-C6 alkenyl, unsubstituted or halogenated C2-C6 alkynyl, unsubstituted or halogenated C2-C6 acyl, unsubstituted or halogenated C2-C6 amido, unsubstituted or halogenated 5-8 membered aryl, unsubstituted or halogenated 5-8 membered heteroaryl, unsubstituted or halogenated 4-8 membered saturated heterocycle or carbocycle; wherein each of the above heteroaryl groups independently contains 1-3 heteroatoms selected from the group consisting of N, O and S.

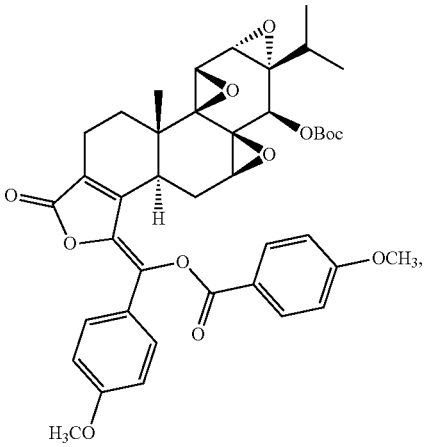
2. The compound of claim **1**, wherein each X is H.

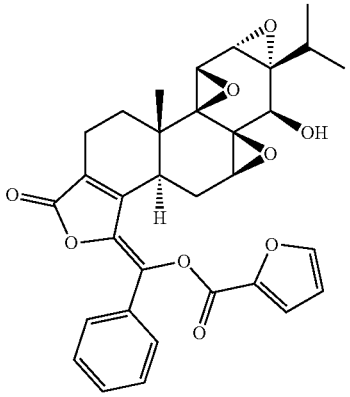
3. The compound of claim **1**, wherein Y is O.

4. The compound of claim **1**, wherein R_1 is a substituted or unsubstituted group selected from the group consisting of: C1-C4 alkyl, C3-C6 cycloalkyl, C6-C10 aryl or 4-8 membered heteroaryl, wherein the term "substituted" means one or more hydrogen atoms on the group are substituted with a substituent selected from the group consisting of halogen, —OH, unsubstituted or halogenated C1-C4 alkyl, and unsubstituted or halogenated C1-C3 alkoxy.

5. The compound of claim **1**, wherein R_2 is a substituted or unsubstituted group selected from the group consisting of: C1-C4 alkyl, C7-C10 arylalkyl, 4-6 membered heteroaryl or —C(═O)R_4, wherein R_4 is a substituted or unsubstituted group selected from the group consisting of: C1-C4 alkyl, C3-C6 cycloalkyl, C6-C10 aryl, C7-C15 arylalkyl or 4-8 membered heteroaryl, wherein the term "substituted" means one or more hydrogen atoms on the group are substituted with a substituent selected from the group consisting of halogen, —OH, unsubstituted or halogenated C1-C4 alkyl, and unsubstituted or halogenated C1-C3 alkoxy.

6. The compound of claim **1**, wherein the compound is:





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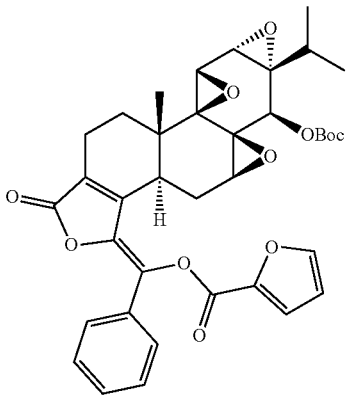

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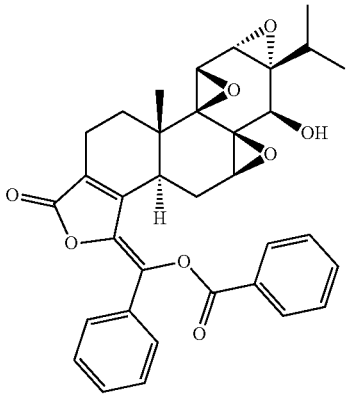

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